



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION 4
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February 23, 2018

Certified Mail
Return Receipt Requested

Don Wiggins, Manager of Technical Services
ERP Compliant Coke, LLC
3500 35th Avenue North
Birmingham, Alabama 35207

RE: Remedy for Former Chemical Plant and Former Pig Iron Foundry
Response to Comments and Final Decision
EPA ID Number: ALD 000 828 848
RCRA Docket Number: RCRA-04-2016-4250

Dear Mr. Wiggins:

The United States Environmental Protection Agency has completed its review of public comments received during the public comment period held for the proposed remedies at ERP Compliant Coke's Birmingham facility. Enclosed with this letter are the Agency's Response to Comments (RTC) and its Final Decision for both the Former Chemical Plant and the Former Pig Iron Foundry. The RTC provides the Agency's response to comments received during the public comment period. The Final Decision describes the selected remedy, including any modifications based on the Agency's RTC, the rationale for selecting the remedy, and outlines general and specific performance standards to which the remedy will be held in future monitoring and effectiveness reports.

With selection of the remedy, attention now turns to remedy implementation. The following are some key timeframes from the 2016 RCRA Section 3008(h) Administrative Order on Consent to keep in mind going forward:

- Pursuant to Section XII Financial Assurance, "[w]ithin 120 calendar days of RTC issuance for each remedy, Respondent shall submit to EPA for review and approval an Estimated Cost of the Corrective Measures Work to Be Performed that includes the total third party cost of implementing the CMS remedy, including any necessary long-term CMS costs."
- Pursuant to Section XIII Corrective Measures Implementation, "[w]ithin one hundred twenty (120) days of Respondent's receipt of notification of EPA's selection of the corrective measure(s), Respondent shall submit to the EPA a Corrective Measures Implementation Work Plan (s) ("CMI Work Plan"). Each CMI Work Plan shall include a QA/QC plan as well as a schedule and date for remedy construction completion." Please note that a CMI Work Plan will need to include not only any design considerations, but future reporting submittals (e.g., a CMI Construction Complete Report, a Long-Term Remedy Monitoring and Effectiveness Plan and subsequent reporting).

Finally, I want to commend ERP Compliant Coke for voluntarily agreeing to meet with the community within ninety calendar (90) days of this Final Decision to further discuss the community's recommendations contained in the Harriman Park Proposal – Ideas for Managing and Maintaining the Mineral Wool Piles Adjacent to the Community (dated August 28, 2017). Recall that one of the people met at the November 2, 2017, Public Meeting was Kimberly Speorl, Senior Planner with the City of Birmingham. As you heard Kimberly say, the City has a new Buffer Ordinance.¹ This new ordinance may serve as a useful guide from which to approach the recommendations in the Harriman Park Proposal. Therefore, it is suggested that you please consider including Ms. Speorl or another City planner during your future meeting(s) with the community.

If you have any questions concerning this matter, please contact me at (404) 562-9629 or hardegree.wes@epa.gov. Legal inquiries should be directed to Joan Redleaf-Durbin at (404) 562-9544 or Redleaf-Durbin.Joan@epa.gov.

Sincerely,



Wesley Hardegree, Project Manager
RCRA Corrective Action and Permitting Section
RCRA Cleanup and Brownfields Branch

Enclosures

1. Response to Comments, Final Decision – Former Chemical Plant
2. Response to Comments, Final Decision – Former Pig Iron Foundry

Cc: Chris Griffith, ADEM (via email)
Terry Rippstein, Terracon (via email)
Kimberly Speorl, City of Birmingham (via email)
Rev. E.O. Jackson, Harriman Park Working Committee (email)

¹ City of Birmingham - Title 1: Zoning Ordinance, Chapter 6: Landscaping, Buffering and Screening, Article III. Buffer Requirements.

**U.S. ENVIRONMENTAL PROTECTION AGENCY
REGION 4**

**RESPONSE TO COMMENTS
FOR
THE FORMER CHEMICAL PLANT AND
THE FORMER PIG IRON FOUNDRY**

**ERP COMPLIANT COKE, LLC
EPA I.D. Number: ALD 000 828 848
RCRA Docket Number: RCRA-04-2016-4250**

February 2018

PUBLIC NOTICE ACTIVITIES

The public comment period, covering the proposed remedies for the Former Chemical Plant and the Former Pig Iron Foundry, occurred from October 1, 2017, to November 14, 2017. A joint public meeting/hearing on the proposed remedies was held on November 2, 2017, in Birmingham, Alabama at the Bethel Baptist Church. Approximately 60 people attended the event. Participants included local residents, as well as representatives of the EPA, local and state government, and the Alabama Department of Environmental Management. Although a number of questions were raised during the public meeting, no formal comments (written or verbal) were offered during the public hearing on November 2nd. However, two entities did submit written comments, both of which were received on November 14, 2017.

RESPONSE TO COMMENTS

All comments were carefully reviewed during the final selection of the remedy and are addressed in this Response to Comments (RTC). Issues, comments or concerns have been combined and edited for length.

No.	Narrative		Impact on Remedy
1.	Comment	Former Chemical Plant, Mineral Wool Piles (MWP): Because of the concern that removal of the MWPs would cause heavy metals to become airborne, the commenter supports the preference of the Harriman Park Community Working Committee to keep the MWPs in-place. The commenter then goes on to express concern that the current decision to keep the MWPs in-place could be changed in the future. The commenter believes the residents in the Northern Birmingham communities would benefit from an agreement with ERP Compliant Coke specifically outlining how long the company plans to leave the MWPs in place and a process by which they will work with and inform the community in the event that ERP Compliant Coke decides to move and/or sell the MWPs.	Remedy Unchanged
	EPA Response	See EPA Response to Comment 2.	
2	Comment	Former Chemical Plant, MWPs: With this comment, the commenter makes reference to Recommendations 5 and 6 from Harriman Park Proposal. a) Recommendation 5: The commenter states that it would be more beneficial to plant native species to Alabama as opposed to invasive species like vinca and ivy. b) Recommendation 6: The commenter references the Shuttlesworth air monitor operated by the Jefferson County Health Department (JCHD) and states that it would be prudent to engage JCHD with the three enumerated partners (i.e., City, EPA, Alabama Department of Environmental Management (ADEM)).	Remedy Unchanged
	EPA Response	Both Comments 1 and 2 are made in reference to the August 2017 Harriman Park Proposal – Ideas for Managing and Maintaining the Mineral Wool Piles (MWPs) Adjacent to the Community. The Harriman Park Proposal is not an EPA document, and its recommendations are not EPA recommendations. Rather, the Harriman Park Proposal is the outcome of a dialogue process fostered by EPA to help the community reach some general consensus on their suggested recommendations for what could happen with the MWPs.	

No.	Narrative	Impact on Remedy
	<p>The hope is that the six recommendations will serve as a starting point for further discussion between the community, ERP Compliant Coke and any other stakeholders. If the commenter wishes to be part of future discussions coming out of the Harriman Park Proposal, then the EPA suggests that close contact be maintained with the community leaders associated with the Harriman Park Proposal. ERP Compliant Coke has indicated their willingness to sit down with the Harriman Park Community Leaders within 90 days from EPA's Final Decision for the Former Chemical Plant and Former Pig Iron Foundry remedies.</p>	
3	<p>Comment</p> <p>Air Monitoring: In this comment, the commenter references the 2016 Alabama Ambient Air Monitoring Plan, which includes Appendix A – the Annual Air Monitoring Network Plan developed by the JCDH. The commenter is pleased that the 2016 Plan included Particulate Matter (PM_{2.5}) monitoring at the Shuttlesworth Air Monitoring Station. However, the commenter is perplexed as to why, contrary to statements made in Appendix A of the Plan, the PM_{2.5} results are not publically accessible through the AirNow website located within the JCDH webpage.</p>	Remedy Unchanged
	<p>EPA Response</p> <p>This comment is not directed toward the proposed remedy that EPA public noticed. However, it was discussed with Todd Rinck, Chief of the EPA Region 4 Air Data & Analysis Section (rinck.todd@epa.gov), who suggested that representatives from GASP can register for access to EPA's AirNow-Tech site (https://www.airnowtech.org/). Once on the AirNow-Tech site, GASP can download data for all monitors that report real-time data to AirNow, including PM_{2.5} data from the Shuttlesworth air monitoring site (AQS # 01-073-6004). When GASP registers, please choose "Other Agency" from the drop down menu in the Agency section.</p> <p>Please feel free to contact Mr. Rinck if you have any questions surrounding this response.</p>	
4	<p>Comment</p> <p>General Comment, Public Notice Process: The commenter expressed a general concern on the length of time EPA used to seek and receive public comments – 45 days is not long enough.</p>	Remedy Unchanged
	<p>EPA Response</p> <p>Paragraph 32 in the Resource Conservation and Recovery Act (RCRA) Section 3008(h) Administrative Order on Consent (Docket Number: RCRA-04-2016-4250), calls for the EPA to "...provide the public with an opportunity to review and comment on its selection of the proposed final corrective measure(s), including the detailed written description and justification for its selection in the Statement of Basis." Forty-five days is a very common period of time used by many federal and state regulatory agencies for the receipt of public comments on draft permits and remedy selections.</p>	
5	<p>Comment</p> <p>General Comment, SWMU Waste Management Areas (SMA): The commenter included a series of questions surrounding the other SMAs and urged EPA to explain the origin of these areas and identify deadlines for the remediation of these remaining areas of contamination.</p>	Remedy Unchanged
	<p>EPA Response</p> <p>Due to the size of the property (~400 acres), and almost from the beginning of EPA's involvement with this property in 1989, the facility has been divided into smaller areas to help organize and direct the investigation of the scope and extent of contamination. Dividing a problem into smaller chunks is a common corrective action practice (e.g., within the Superfund program, sites are broken up similarly into Operable Units), and this division</p>	

No.	Narrative	Impact on Remedy
	<p>ultimately resulted in five distinct areas at this coking facility: Biological Treatment Facility (SMA 1), the Land Disposal Area (SMA 2), and the Coke Manufacturing Plant (SMA 3), Former Chemical Plant (SMA 4) and the Former Pig Iron Foundry (SMA 5).</p> <p>The Coke Manufacturing Plant is currently the next SMA to see a Statement of Basis, probably in 2018, with the remaining two SMAs to follow.</p>	
6	<p>Comment</p> <p>Former Chemical Plant, MWPs: With this comment, various concerns are expressed with the MWPs.</p> <ul style="list-style-type: none"> • The commenter wants to better understand EPA's authority; • The commenter wants the piles removed to avoid leaching of contaminants to groundwater; • If removal is not forthcoming, then the commenter wants the MWPs to be capped to protect against fugitive dust. 	Remedy Unchanged
	<p>EPA Response</p> <p>The EPA's jurisdiction is through a 2016 Administrative Order on Consent ("Order") issued pursuant to the authority vested in the Administrator of the United States Environmental Protection Agency ("EPA") by Section 3008(h) of the Solid Waste Disposal Act, commonly referred to as the Resource Conservation and Recovery Act of 1976 ("RCRA"), as amended by the Hazardous and Solid Waste Amendments ("HSWA") of 1984, 42 U.S.C. § 6928(h). Section 3008(h) of RCRA, 42 U.S.C. § 6928(h), authorizes the Administrator of EPA or her delegatee to issue an order requiring corrective action or such other response which she deems necessary to protect human health or the environment, if, on the basis of any information, she determines that there is or has been a release of hazardous waste or hazardous constituents into the environment from a Facility that is, was, or should have been authorized to operate under Section 3005(e) of RCRA, 42 U.S.C. § 6925(e).</p> <p>Given the above authority, no remedy was proposed for the MWPs because the sampling to date has not found the MWPs to present a level of risk that is unacceptable and needed to protect human health or the environment. For example:</p> <ul style="list-style-type: none"> • Sampling of the MWPs included testing by the Synthetic Precipitation Leaching Procedure (SPLP), a procedure designed to simulate material left in-situ and exposed to rainfall and then determine the mobility of both organic and inorganic constituents within the material. The results from this testing do not indicate that the MWPs are a threat to groundwater due to leaching. • A human health risk assessment of the constituents found in the MWPs concludes the MWPs do not contain constituent levels warranting cleanup. The risk assessment also concludes that the constituent levels do not pose an unacceptable inhalation risk to offsite residents, both adults and children. • Air monitoring by JCHD at the nearby Shuttlesworth Air Monitoring Station (010736004) has not indicated the daily average of particular matter (PM, "dust"), either PM₁₀ or PM_{2.5}, to be a current concern (i.e., results are below the 24-hour PM standards). 	
7	<p>Comment</p> <p>Former Chemical Plant, In-Situ Treatment: The commenter is concerned that the remedy component, in-situ treatment, was prematurely selected before knowing the full cost and long term implications of the yet to be</p>	Remedy Unchanged

No.	Narrative	Impact on Remedy
	<p>determined chemical or biologic in-situ agent, and that other considerations like excavation, removal/disposal of contaminated soils were not considered.</p> <p>In-situ treatment was included as a component of the proposed remedy to assist/enhance the ability of another remedy component (groundwater extraction) in restoring groundwater to drinkable conditions.</p> <p>With any in-situ treatment, the goal is either to destroy, remove, or degrade the existing soil contamination that may be serving as an ongoing source of groundwater contamination. Sampling to date does not indicate any distinct source of soil contamination at the Former Chemical Plant that is amenable to excavation or removal. Rather, the sampling suggests that dispersed, residual sources may exist, and if they are not removed or degraded, then aquifer restoration pursued through groundwater extraction alone will take a much longer time or maybe even fail. Therefore, the goal of the in-situ soil source area treatment option will be to generally lower, as needed, soil concentrations of relevant contaminants in select subsurface areas. In addition, groundwater in the area of the treated soil areas will also receive some treatment as an ancillary benefit, which will in turn help to further reduce contaminant mass within the groundwater plume.</p> <p>Treatability investigations are not required in every case for an accurate evaluation of a remedial alternative to occur. Generically, both chemical and biological agents have been found to be useful in-situ treatment materials for the constituents at the Former Chemical Plant. The bench-scale studies, to be performed during the upcoming Corrective Measures Implementation phase, are designed to select which specific agent should be used in this particular case. In other words, in this case, there is confidence that the technology will work reasonably well, and performance of the bench-scale studies is an acceptable approach and was deemed preferable to further delay in remedy selection.</p> <p>As with any remedy pursued to cleanup environmental contamination, monitoring of the effectiveness will occur. If the remedy ultimately fails to not meet the cleanup objectives, then a reassessment of the remedial approach will occur and a new remedial path will be forged.</p>	
8	<p>Comment</p> <p><u>Former Chemical Plant, Vapor Intrusion:</u> The commenter is concerned that only one home was studied for vapor intrusion and that a new, more rigorous indoor vapor study should be developed and implemented.</p> <p>EPA Response</p> <p>At the time the year-long vapor intrusion study was undertaken (2013-2014), the contaminated groundwater had migrated to be slightly offsite. The house studied for vapor intrusion was the closest home to this offsite groundwater plume (i.e., worst case scenario).</p> <p>With the groundwater extraction system operating since 2013, an action that is helping to minimize and control the migration of groundwater contamination offsite, this studied house is now even farther from the source of possible subsurface vapors. For example, a buffer zone of approximately 100 feet generally has been used in preliminary determinations of which buildings to include in vapor intrusion investigations. The previously studied house is now ~120 to 250 feet from the general boundary of the groundwater plume. The next closest house is ~250 to 400 feet away from the general boundary of the groundwater plume.</p>	Remedy Unchanged

No.	Narrative	Impact on Remedy
9	<p>Comment <u>Former Chemical Plant, Groundwater Treatment:</u> The commenter is concerned that the extracted groundwater is being recycled back into the industrial process.</p>	Remedy Unchanged
	<p>EPA Response</p> <p>The cooling of coke oven gas containing volatiles and semi-volatiles and the processing of ammonia, tar, naphthalene, phenol, light oil (benzene/toluene/xylene) generates major wastewater streams. This wastewater is ultimately sent to the Biological Treatment Facility (BTF), which is permitted under the National Pollutant Discharge Elimination System (NPDES).</p> <p>The volatile and semi-volatile constituents in the combined effluent from the groundwater extraction wells are basically the same as those found in the plant's process water. Basically, the extracted groundwater is being used in the light oil process: a system designed to collect light oil accomplished by absorption using petroleum wash oil to scrub the coke oven gas stream, followed by steam distillation of the enriched absorbent to recover the light oil.</p> <p>At a point in the light oil process there is a Wash Oil Decanter, which has debenzolized wash oil at elevated temperatures coming in from the light oil still. Direct contact water sprays accomplish some cooling of the oil as the oil enters the decanter. This is where the extracted groundwater is added to this process as a part of the makeup of direct cooling water addition. Water and muck are separated from the oil in the decanter and the oil flows to the hot wash oil circulating tank. The contact water flows to the muck tank. The muck tank water is pumped to the muck decanter in order to further separate contact water, muck and oil. Contact water is pumped to T-62 liquor collecting tank. This T-62 liquor collecting tank collects all liquors of the coke making process and sends them to the Weak Liquor Tanks, which supply the Ammonia still operation. Water leaving the ammonia stills is then sent to the Equalization tanks prior to being released to the BTF.</p> <p>The EPA believes the recycling of this extracted groundwater back into the manufacturing system is both a protective and economical action.</p>	
10	<p>Comment <u>Former Pig Iron Foundry, Risk Assessment Receptors:</u> The commenter wonders why trespassers were not included in the risk assessment for the Former Pig Iron Foundry when trespassers were included in the risk assessment for the Former Chemical Plant.</p>	Remedy Unchanged
	<p>EPA Response</p> <p>Although the act of knowingly entering another person's property without permission cannot be prevented, trespassers are generally not anticipated on an operating and secured industrial facility.</p> <p>The trespasser scenario was evaluated at the Former Chemical Plant, and this scenario, which was performed with conservative exposure and ingestion assumptions, did not show risk levels necessary to protect human health. With that information, the risk assessment for the Former Pig Iron Foundry, an even more central area of the facility and with less contamination, did not include a trespasser analysis.</p>	

**U.S. ENVIRONMENTAL PROTECTION AGENCY
REGION 4**

**FINAL (REMEDY) DECISION
FOR
THE FORMER CHEMICAL PLANT**

**ERP COMPLIANT COKE, LLC
EPA I.D. Number: ALD 000 828 848
RCRA Docket Number: RCRA-04-2016-4250**

February 2018

Table of Contents

I. INTRODUCTION	3
Table 1. SWMUS and AOCs.....	3
II. BACKGROUND	3
A. Risk and Proposed Remedy	3
Table 2. Evaluation of Remediation Triggers	4
B. Facility-Specific Corrective Action Objectives	5
Table 3. Facility-Specific Corrective Measure Objectives	5
III. SELECTED REMEDY	6
IV. FUTURE PERFORMANCE, MONITORING AND EFFECTIVENESS.....	7
A. Facility-Specific Corrective Action (Remedy) Objectives	7
B. Facility-Specific Cleanup Standards	7
Table 4. Numeric Cleanup Standards Facility-Specific Groundwater Objective 4 (Groundwater Restoration) and Groundwater Objective 5 (Hydraulic Control)	7
Table 5. Numeric Cleanup Standards for Facility-Specific Groundwater Objective 6 (Source Removal) and Soil Objective 3 (Leaching)	7
Table 6. Numeric Cleanup Standards for Facility-Specific Soil Objectives 1 and 2 (Land Use Controls)	8
Table 7. Narrative (Non-Numeric) Cleanup Standards for Facility-Specific Soil Objectives 1 and 2 and Groundwater Objective 7 (Land Use Controls)	9
V. DECISION.....	10

I. INTRODUCTION

Pursuant to the August 11, 2016, Resource Conservation and Recovery Act (RCRA) Section 3008(h) Administrative Order on Consent (Order), ERP Compliant Coke agreed to study remedial alternatives and implement the EPA-approved remedies at forty-five Solid Waste Management Units (SWMUs) and six Areas of Concern (AOCs), which are grouped into the following five Solid Waste Management Areas (SMAs):

1. SMA 1 - Biological Treatment Facility
2. SMA 2 - Land Disposal Area
3. SMA 3 - Coke Manufacturing Plant
4. SMA 4 - Former Chemical Plant
5. SMA 5 - Former Pig Iron Foundry

This Final Decision only concerns the Former Chemical Plant and its associated SWMUs and AOCs identified in the 2016 Order (see Table 1). The proposed remedy for the Former Pig Iron Foundry, which was public noticed at the same time as the proposed remedy for the Former Chemical Plant, will be addressed in a separate Final Decision document. The remaining three SMAs have yet to reach the proposed remedy phase.

Table 1. SWMUS and AOCs	
SMWU 26 – Main Process Building	SWMU 33 – Plant Drum Storage Area
SWMU 27 – Floor Drain System	SWMU 34 – Wastewater Neutralization System
SWMU 28 – Sulfonation Floor Drain	SWMU 35 – Mineral Wool Waste Piles
SWMU 29 – Product Tank Containment Area	SWMU 36 – Used Oil Tank
SWMU 30 – Centrifuge Waste Water Tank	SWMU 42 – Former Above Ground Storage Tanks (ASTs)
SWMU 31 – Monohydrate Floor Drain and Sump	AOC B – Drainage Ditch next to Shuttlesworth Drive and 35th Avenue
SWMU 32 – Drum Storage Area	AOC D – Former Chemical Plant (FCP) Groundwater Plume

II. BACKGROUND

A. Risk and Proposed Remedy

Remedial action (i.e., environmental cleanup) is required if environmental contamination fails any one of the four standard EPA remediation triggers.¹ As shown in Table 2, some of these remediation triggers have been exceeded at the Former Chemical Plant. Therefore, on October 1, 2017, the recommended remedy found in the facility's April 14, 2017, Corrective Measure Study Report and identified as **Alternative 5: Land Use Controls + In-Situ Soil Source Area Treatment + Groundwater Removal and Treatment + Groundwater Monitoring**, was proposed to the public as the remedy to address the identified risks.

¹ In general, remediation is needed if at least one of the following four standard EPA remediation triggers are exceeded:

- The cumulative excess carcinogenic site risk to an individual exceeds 1E-04;
- The non-carcinogenic hazard index is greater than 1;
- Site contaminants cause adverse environmental impacts; or
- Chemical-specific standards are exceeded (e.g., drinking water standards aka maximum contaminant levels (MCL)).

Table 2. Evaluation of Remediation Triggers

EPA Remediation Trigger	Analysis		Is there an Identified Risk to Assess for Possible Cleanup?
	Receptor	Baseline Risk Assessment Finding	
The cumulative excess carcinogenic site risk to an individual exceeds 0.0001 (i.e., 1E-04).*	Industrial Worker	Cumulative excess carcinogenic site risk was calculated to be 2.7E-03 and 1.6E-02, current and future risk respectively. Groundwater is the predominant factor in exceeding the cumulative site risk.	Yes
	Construction Worker	Cumulative excess carcinogenic site risk was calculated to be 5.6E-04 and 5.6E-04, current and future risk respectively. Groundwater is the predominant factor in exceeding the cumulative site risk.	Yes
	Trespasser	Cumulative excess carcinogenic site risk was calculated to be 5.6E-06 for both current and future risk.	No
	Resident	For adult and child residents, the excess carcinogenic risk from the Mineral Wool Piles via an inhalation route of exposure was found to be 1.9E-07 and 2.3E-07, respectively.***	No
The non-carcinogenic hazard index is greater than 1 (i.e., 1E 00).**	Industrial Worker	Non-carcinogenic hazard index was calculated to be 2.9E+02 and 6.2E+02, current and future risk respectively. Groundwater is the predominant factor in exceeding the cumulative site risk.	Yes
	Construction Worker	Non-carcinogenic hazard index was calculated to be 3.7E+02 and 3.7E+02, current and future risk respectively. Groundwater is the predominant factor in exceeding the cumulative site risk. Subsurface soil is also a minor contributing factor in exceeding the cumulative site risk.	Yes
	Trespasser	Non-carcinogenic hazard index was calculated to be 1.4E-02 for both current and future risk.	No
	Resident	For adults and children, the noncancer hazard index for the Mineral Wool Piles via an inhalation route of exposure was calculated to be 8.6E-05 and 1.7E-04, respectively.***	No
Site contaminants cause adverse environmental impacts.	No areas of ecological significance exist at SMA 4.		No
Chemical-specific standards are exceeded.	Drinking water standards (aka maximum contaminant levels (MCL)) have been exceeded in wells within SMA 4 for the following constituents: Benzene, Chlorobenzene, Cis-1,2-Dichloroethene, and Vinyl Chloride.		Yes

Notes

* A risk level of 1E-04 represents an increase of one additional person out of 10,000 developing cancer over the course of a lifetime of exposure. Risks calculated to exceed 1E-04 for a receptor are deemed to have exceeded a protective level and remedial action is needed. When a facility's calculated cumulative risk for a receptor exceeds 1E-04, EPA's goal is to reduce the threat from carcinogenic contaminants such that, for any medium, the excess lifetime risk of cancer to such a receptor generally falls within a range from one in ten thousand to one in one million (i.e., 1E-04 to 1E-06).

** As the hazard index exceeds 1.0, the potential for adverse health effects increases. Risks calculated to exceed 1.0 are deemed to have exceeded a protective level and remedial action is needed.

Table 2. Evaluation of Remediation Triggers

EPA Remediation Trigger	Analysis	Is there an Identified Risk to Assess for Possible Cleanup?
<p>*** Given the community's concern regarding the Mineral Wool Piles, the risk to nearby residents from the piles was evaluated as if it were soil. Although the risk assessment was based on the facility's current and reasonably expected future uses as an operating industrial facility with restricted access, in the case of the Mineral Wool Piles, it is possible that some material from the pile may become airborne, disperse in wind, and migrate off-site causing some exposure. Because of this potentially complete pathway, nearby residents (both adult and children) were evaluated for inhalation exposure to the constituents present in the Mineral Wool Piles.</p>		

B. Facility-Specific Corrective Action Objectives

Seven Facility-Specific Corrective Action Objectives were identified to address the risks listed in Table 1. These facility-specific objectives are developed from the EPA's General Corrective Action Performance Standards (see Table 3).²

Table 3. Facility-Specific Corrective Measure Objectives

No.	Environmental Media	Corrective Measures Objective
1	Soil	Maintain, in perpetuity, land use as industrial, a setting that has been found to be protective for the detected soil concentrations.
2	Soil	Ensure that industrial/commercial workers, construction workers, and trespassers are not exposed to unacceptable levels of soil contaminants.
3	Soil	Minimize the potential for soil contaminants to leach and contaminant groundwater or adversely impact groundwater cleanup.
4	Groundwater	Restore groundwater to maximum beneficial use, which in this case is as a drinking water aquifer.*
5	Groundwater	While aquifer restoration is sought, hydraulically control the groundwater plume in order to keep contamination that is above identified cleanup standards from expanding and/or migrating offsite.
6	Groundwater	Remove significant sources of subsurface mass.**

² General Corrective Action Performance Objectives (aka RCRA Cleanup Threshold Criteria) include the following:

1. **Protect Human Health and the Environment (EPA's General Mandate for the RCRA Statute):** Remedies must be protective of human health and the environment. Remedies usually meet this criterion by meeting the second (meet cleanup goals) and third (source control) criteria. However, this first criterion also serves to ensure remedies include protective activities that would not necessarily be needed to achieve the other criteria. As such, remedies may include those measures that are needed to be protective, but are not directly related to media cleanup, source control or management of wastes. An example would be a requirement to provide alternative drinking water supplies in order to prevent exposures to releases from an aquifer used for drinking water purposes.
2. **Attain Media Cleanup Standards:** Remedies must achieve the chemical specific cleanup standards for each media, including restoration of groundwater to drinking water standards, or any other standards established by statute. The standards must be either background, promulgated federal and state standards or risk-derived standards. Selection of cleanup standards also requires the establishment of points of compliance which represent where the media cleanup levels are to be achieved; remediation time frame which is the site-specific schedule for a remedy (including both the time frame to construct the remedy and estimate of the time frame to achieve the cleanup levels at the points of compliance).
3. **Control of Sources of Releases:** Remedies must control the sources of release(s) so as to reduce or eliminate, to the extent practicable, further releases of hazardous waste or hazardous constituents that may pose a threat to human health and the environment. In this context, "source" includes both the location of the original release as well as locations where significant mass of contaminants may have migrated and remain in a distinct geographic area.

7	Groundwater	While aquifer restoration is sought, control current land use exposures (e.g., industrial/commercial workers, construction workers, and trespassers) and potential future exposures (residents) to groundwater above the identified cleanup standards.
Notes * It is EPA's policy to determine protective media cleanup objectives for groundwater remedies considering the use, value, and vulnerability of the groundwater resource, and all potential pathways that could result in human or ecological exposure to contaminants (Final Comprehensive State Ground Water Protection Program Guidance, December 1992). Typically, the groundwater use designation or classification system is the starting point for determining the appropriate reasonable expected uses and exposures to evaluate risks and identify groundwater cleanup levels. ** Reaching restoration of groundwater will not occur unless the original source is remediated/eliminated. In this context, "sources" includes both the location of the original release as well as locations where significant mass of contaminants may have migrated and remain in a distinct geographic area.		

III. SELECTED REMEDY – Alternative 5: Land Use Controls + In-Situ Soil Source Area Treatment + Groundwater Removal and Treatment + Groundwater Monitoring

The recommended remedy found in the facility's April 14, 2017, Corrective Measure Study Report and proposed to the public on October 1, 2017, is identified as Alternative 5: Land Use Controls + In-Situ Soil Source Area Treatment + Groundwater Removal and Treatment + Groundwater Monitoring. This alternative can reasonably be concluded to satisfy all of the Facility-Specific Corrective Action Objectives found in Table 3; therefore, it is EPA's Final Decision that Alternative 5, which consists of the following components, be the remedy for the Former Chemical Plant.

- **Land Use Controls:** Land use controls are administrative means to protect current and future human exposure to unacceptable environmental contamination. This protection will be accomplished through the following techniques/techniques:
 - Land Use Control Plan (LUCP) developed by the Facility (and overseen by EPA)
 - An Environmental Covenant secured under the Alabama Uniform Environmental Covenants Act, Ala. Code §§ 35-19-1 to 35-19-14 (2007 Cum. Supp.).
- **In-Situ Soil Source Area Treatment/In-Situ Groundwater Treatment:** Chemicals or bacteria (e.g., zero valent iron, yeast extract, micronutrients, potassium permanganate, etc.) will be used with the purpose of helping prevent any further release of contaminants from the soil to the groundwater and aiding in advancing the groundwater remediation. Bench scale studies will need to be conducted to determine the appropriate chemicals or bacteria to be used, the concentrations, locations, etc.
- **Groundwater Removal and Treatment:** The hydraulic control well network, which was installed under an Interim Measures in 2013 to control the VOC groundwater plume and currently consists of 6 extraction wells, will continue. The recovered groundwater will be used as process water for the coke plant and will eventually cycle to the Facility's Biological Treatment Facility (BTF) for subsequent discharge in compliance with the Facility's NPDES Permit.
- **Groundwater Monitoring:** Long-term groundwater monitoring will occur to assess the effectiveness of the overall remediation system.

With this remedy, all of the SWMUs and AOCs listed in Table 1, except AOC D – Former Chemical Plant Groundwater Plume, are no further action. The remedy components concerning soil are not easily associated with any particular unit listed in Table 1. The broad concerns with the soil addressed by this remedy are now subsumed by a new AOC G – Former Chemical Plant Dispersed Soil Contamination.

IV. FUTURE PERFORMANCE, MONITORING AND EFFECTIVENESS OF SELECTED REMEDY

The selected remedy will be assessed against the following facility-specific objectives and cleanup standards:

A. Facility-Specific Corrective Action (Remedy) Objectives

The selected remedy will conform with the Facility-Specific Corrective Action Objectives listed in Table 3 of this Final Decision.

B. Facility-Specific Cleanup Standards

The success of the selected remedy will be measured against the numeric and non-numeric cleanup standards listed in Tables 4 through 7.

Table 4. Numeric Cleanup Standards for Facility-Specific Groundwater Objective 4 (Groundwater Restoration) and Groundwater Objective 5 (Hydraulic Control)		
Contaminant	Groundwater	Point of Compliance
	Concentration (ug/L)	
1. Benzene	5 *	Throughout the Plume
2. Benzo(a)anthracene	0.03 **	
3. Benzo(a)pyrene	0.2 *	
4. Benzo(b)fluoranthene	0.25 **	
5. Chlorobenzene	100 *	
6. Cis-1,2-Dichloroethene	70 *	
7. Dibenz(a,h)anthracene	0.025 **	
8. Indo[1,2,3-cd]pyrene	0.25 **	
9. Methylene Chloride	5 *	
10. Napthalene	0.17 **	
11. Trichloroethene	5 *	
12. Toluene	1,000 *	
13. Pentachlorophenol	1 *	
14. Vinyl Chloride	2 *	
15. 1,2,4-Trichlorobenzene	70 *	
16. 1,2-Dichloroethane	5 *	
17. 1,4-Dichlorobenzene	75 *	
18. 1,4-Dioxane	0.46 **	
* Maximum Contaminant Level (MCL)		
** Carcinogenic Tap Water Regional Screening Level (June 2017)		

Table 5. Numeric Cleanup Standards* for Facility-Specific Groundwater Objective 6 (Source Removal) and Soil Objective 3 (Leaching)	
Contaminant	Groundwater Protection Soil Screening Levels (leachability)
	Concentration (mg/kg)
Arsenic	6
Benzene	0.11
Benzo(a)anthracene	1

Table 5. Numeric Cleanup Standards* for Facility-Specific Groundwater Objective 6 (Source Removal) and Soil Objective 3 (Leaching)	
Contaminant	Groundwater Protection Soil Screening Levels (leachability) Concentration (mg/kg)
Benzo(b)fluoranthene	2
Carbazole	0.1
Chlorobenzene	3.1
Dibenzofuran	0.015
Methylene chloride	0.033
Naphthalene	0.026
Toluene	31
Vinyl chloride	0.017
1-Methylnaphthalene	0.006
3 & 4 Methylphenol	0.17
4-Methylphenol (p-cresol)	0.15
<p>* These soil leaching standards are site specific soil screening levels from Appendix G of the Phase III RCRA Facility Investigation (RFI) Report (March 2009). They constitute the lowest target values that soil might need to reach in order for groundwater cleanup to be obtained/maintained. Soil levels higher than those listed here may turn out to be acceptable if Facility-Specific Groundwater Objective 4 (aquifer restoration) can be reached. In other words, the leachability cleanup standards are not to be strictly interpreted as levels to be met at every soil sample location. Instead, they are to be applied in coordination with the success in meeting the cleanup standards for groundwater restoration listed in Table 4.</p>	

Table 6. Numeric Cleanup Standards*** for Facility-Specific Soil Objectives 1 and 2 (Land Use Controls)				
Contaminant	Industrial/Commercial Worker		Construction Worker	
	Surface Soil (0-1 ft)	Groundwater	Subsurface Soil (2-15 ft)	Groundwater
	Concentration (mg/kg)	Concentration (ug/L)	Concentration (mg/kg)	Concentration (ug/L)
1. Arsenic	19 *	N/A	N/A	N/A
2. Benzene	N/A	15 *	409 **	110 **
3. Benzo(a)anthracene	29 *	0.08 *	N/A	N/A
4. Benzo(a)pyrene	2.9 *	0.005 *	28 *	N/A
5. Benzo(b)fluoranthene	29 *	0.09 *	N/A	N/A
6. Chlorobenzene	N/A	261 **	1,171 **	222 **
7. Chromium	65 *	N/A	N/A	N/A
8. Cis-1,2-Dichloroethene	N/A	202 *	N/A	N/A
9. Dibenz(a,h)anthracene	2.9 *	0.003 *	N/A	N/A
10. Indo[1,2,3-cd]pyrene	29 *	0.003 *	N/A	N/A
11. Methylene Chloride	N/A	547 *	N/A	N/A
12. Naphthalene	N/A	5.18 *	N/A	16 **
13. Trichloroethene	N/A	9.54 **	N/A	9.54 **
14. Toluene	N/A	5,278 **	21,785 **	16,382 **
15. Pentachlorophenol	N/A	0.51 *	N/A	N/A
16. Vinyl Chloride	N/A	3.7 *	N/A	317 **
17. 1,2,4-Trichlorobenzene	N/A	12 *	N/A	12 **
18. 1,2-Dichloroethane	N/A	5.4 *	N/A	31.2 **
19. 1,4-Dichlorobenzene	N/A	15 *	N/A	327 *
20. 1,4-Dioxane	N/A/	17 *	N/A	N/A
N/A Not Applicable				
* April 14, 2017 Risk Assessment, Estimated Lifetime Cancer Risk (ELCR) = 10E-05				

Table 6. Numeric Cleanup Standards* for
Facility-Specific Soil Objectives 1 and 2 (Land Use Controls)**

Contaminant	Industrial/Commercial Worker		Construction Worker	
	Surface Soil (0-1 ft)	Groundwater	Subsurface Soil (2-15 ft)	Groundwater
	Concentration (mg/kg)	Concentration (ug/L)	Concentration (mg/kg)	Concentration (ug/L)

** April 14, 2017 Risk Assessment, Hazardous Quotient = 1

*** These soil cleanup standards constitute the level that is protective of humans in an industrial setting. At this time, the soil concentrations and distribution do not warrant active remediation given the current industrial land use. These industrial cleanup levels serve as the basis for applying institutional controls (see Table 7), and can be used to evaluate any future soil results obtained within SMA-4 in order to help in determining what, if any, active remediation is needed.

**Table 7. Narrative (Non-Numeric) Cleanup Standards for
Facility-Specific Soil Objectives 1 and 2 and Groundwater Objective 7 (Land Use Controls)**

Cleanup "Technology"	Comment on Cleanup "Technology"	Implementation Technique / Mechanism	Component of Cleanup Standard	Point of Compliance
Institutional Controls	<p>With use of a current and reasonable setting of industrial/commercial land use, the need to actively address soil contamination was deemed not to be needed. Groundwater contamination does exist at levels requiring active remediation.</p> <p>In order to satisfy Facility-Specific Soil Corrective Measure Objectives 1 and 2 and to satisfy Facility-Specific Corrective Measure Objective 4, institutional controls are needed to ensure that land use does not inadvertently and/or unknowingly become residential in the future, and to protect workers from unknowingly being exposed to contamination that might be at unacceptable levels.</p>	Environmental Covenant	<p>An Environmental Covenant shall be secured under the Alabama Uniform Environmental Covenants Act, Ala. Code §§ 35-19-1 to 35-19-14 (2007 Cum. Supp.).</p> <p>The Environmental Covenant shall be entered with the intent of providing clear and enforceable rules for the perpetual care of the Facility's real estate in light of the selected remedy. The Environmental Covenant shall list components of the LUCP that best reside long term with the land as opposed to specific operating procedures at the Facility (e.g., deed restriction to limit site to industrial land use only; deed restriction to limit use of groundwater, etc.).</p>	Throughout the SMA
Institutional Controls		Corporate Land Use Plan (LUCP)	<p>The LUCP, at a minimum, shall:</p> <ol style="list-style-type: none"> 1. Acquire a deed restriction on land and groundwater use through securing an Environmental Covenant. 2. Explain the land use controls to be used to protect workers, contractors, public from exposure to contaminated environmental media (e.g., permits to perform any digging activities and the proper personal protective equipment (PPE), fences/signs as necessary to prevent unauthorized access, etc.). 3. Include all necessary information or structure 	Throughout the SMA

Table 7. Narrative (Non-Numeric) Cleanup Standards for Facility-Specific Soil Objectives 1 and 2 and Groundwater Objective 7 (Land Use Controls)				
Cleanup "Technology"	Comment on Cleanup "Technology"	Implementation Technique / Mechanism	Component of Cleanup Standard	Point of Compliance
			necessary to implement the LUCP (e.g., points-of-contact; monitoring program; notification procedures for LUCP violations, pending sale/lease of property, etc.; and reporting).	

V. DECISION

Based on the administrative record compiled for this corrective action remedy, I have determined that the selected remedy described in this document will be protective of human health and the environment.

2/22/18
Date


Carol J. Monell
Acting Director
Resource Conservation and Restoration Division

**U.S. ENVIRONMENTAL PROTECTION AGENCY
REGION 4**

**FINAL (REMEDY) DECISION
FOR
THE FORMER PIG IRON FOUNDRY**

**ERP COMPLIANT COKE, LLC
EPA I.D. Number: ALD 000 828 848
RCRA Docket Number: RCRA-04-2016-4250**

February 2018

Table of Contents

I. INTRODUCTION	3
Table 1. SWMUs and AOC at SMA 5 – Former Pig Iron Foundry	3
II. BACKGROUND	3
A. Risk and Proposed Remedy	3
Table 2. Evaluation of Risk Remediation Triggers – Former Pig Iron Foundry	3
B. Facility-Specific Corrective Action Objectives	4
Table 3. Facility-Specific Corrective Measure Objectives – Former Pig Iron Foundry	5
III. SELECTED REMEDY	5
IV. FUTURE PERFORMANCE, MONITORING AND EFFECTIVENESS OF SELECTED REMEDY	5
A. Facility-Specific Corrective Action (Remedy) Objectives	5
B. Facility-Specific Cleanup Standards	5
Table 4. Narrative (Non-Numeric) Cleanup Standards for Facility-Specific Soil Objectives 1 and 2 (Land Use Controls)	6
V. DECISION	7

I. INTRODUCTION

Pursuant to the August 11, 2016, Resource Conservation and Recovery Act (RCRA) Section 3008(h) Administrative Order on Consent (Order), ERP Compliant Coke agreed to study remedial alternatives and implement the EPA-approved remedies at forty-five Solid Waste Management Units (SWMUs) and six Areas of Concern (AOCs), which are grouped into the following five Solid Waste Management Areas (SMAs):

1. SMA 1 - Biological Treatment Facility
2. SMA 2 - Land Disposal Area
3. SMA 3 - Coke Manufacturing Plant
4. SMA 4 - Former Chemical Plant
5. SMA 5 - Former Pig Iron Foundry

This Final Decision concerns only the Former Pig Iron Foundry and its associated SWMUs and AOCs (see Table 1). The proposed remedy for the Former Chemical Plant, which was public noticed at the same time as the proposed remedy for the Former Pig Iron Foundry, will be addressed in a separate Final Decision document. The remaining three SMAs have yet to reach the proposed remedy phase.

Table 1. SWMUs and AOC at SMA 5 – Former Pig Iron Foundry

SMWU 43 – Pig Machine Slurry Pits	SWMU 45 – Slag Drying Beds
SWMU 44 – Blast Furnace Ash Boiler Pit	AOC C – Former Pig Iron Foundry

II. BACKGROUND

A. Risk and Proposed Remedy

Remedial action (i.e., environmental cleanup) is required if the facility's contamination fails any one of the four standard EPA remediation triggers.¹ As shown in Table 2, none of these remediation triggers have been exceeded at the Former Pig Iron Foundry, which indicates that conditions at the Former Pig Iron Foundry do not warrant remedial action to protect industrial or construction workers.

Table 2. Evaluation of Risk Remediation Triggers – Former Pig Iron Foundry

EPA Remediation Trigger	Analysis		Is there an Identified Risk to Assess for Possible Cleanup?
	Receptor	Baseline Risk Assessment Finding	
The cumulative excess carcinogenic site risk to	Industrial Worker	Cumulative excess carcinogenic site risk was calculated to be 9.7E-06.	No

¹ In general, remediation is needed if at least one of the following three standard EPA remediation triggers are exceeded:

- The cumulative excess carcinogenic site risk to an individual exceeds 1E-04;
- The non-carcinogenic hazard index is greater than 1;
- Site contaminants cause adverse environmental impacts; or
- Chemical-specific standards are exceeded (e.g., drinking water standards aka maximum contaminant levels (MCL)).

Table 2. Evaluation of Risk Remediation Triggers – Former Pig Iron Foundry

EPA Remediation Trigger	Analysis		Is there an Identified Risk to Assess for Possible Cleanup?
an individual exceeds 0.0001 (i.e., 1E-04).*	Construction Worker	Cumulative excess carcinogenic site risk was calculated to be 7.7E-06.	No
The non-carcinogenic hazard index is greater than 1 (i.e., 1E 00).**	Industrial Worker	Non-carcinogenic hazard index was calculated to be 2.2E-02.	No
	Construction Worker	Non-carcinogenic hazard index was calculated to be 2.3E-01.	No
Site contaminants cause adverse environmental impacts.	No areas of ecological significance exist at SMA 5.		No
Chemical-specific standards are exceeded.	Based on groundwater sampling conducted around SMA 5 during previous investigations, there has been no indication that drinking water standards (aka maximum contaminant levels (MCL)) have been exceeded at SMA 5.		No

Notes:

* A risk level of 1E-04 represents an increase of one additional person out of 10,000 developing cancer over the course of a lifetime of exposure. Risks calculated to exceed 1E-04 are deemed to have exceeded a protective level and remedial action is needed. When a facility's cumulative risk exceeds 1E-04, EPA's goal is to reduce the threat from carcinogenic contaminants such that, for any medium, the excess risk of cancer to an individual exposed over a lifetime generally falls within a range from one in ten thousand to one in one million (i.e., 1E-04 to 1E-06).

** As the hazard index exceeds 1.0, the potential for adverse health effects increases. Risks calculated to exceed 1.0 are deemed by EPA to have exceeded a protective level and remedial action is needed.

B. Facility-Specific Corrective Action Objectives

Although the risk levels identified in the Baseline Risk Assessment and summarized in Table 2 of this Final Decision do not exceed the levels the EPA has identified as triggering the need for remediation under current land use, the risk assessment limited its risk analyses to those exposures expected in an industrial setting (i.e., industrial/commercial workers and construction workers). Because constituents will remain at levels exceeding residential risk screening levels, action is needed to ensure that land use does not inadvertently and/or unknowingly become residential in the future. Therefore, application of the EPA's General Corrective Action Performance Standards² resulted in one Facility-Specific Corrective Action Objectives for the Former Pig Iron Foundry (see Table 3).

² General Corrective Action Performance Objectives (aka RCRA Cleanup Threshold Criteria) include the following:

1. Protect Human Health and the Environment (EPA's General Mandate for the RCRA Statute): Remedies must be protective of human health and the environment. Remedies usually meet this criterion by meeting the second (meet cleanup goals) and third (source control) criteria. However, this first criterion also serves to ensure remedies include protective activities that would not necessarily be needed to achieve the other criteria. As such, remedies may include those measures that are needed to be protective, but are not directly related to media cleanup, source control or management of wastes. An example would be a requirement to provide alternative drinking water supplies in order to prevent exposures to releases from an aquifer used for drinking water purposes.
2. Attain Media Cleanup Standards: Remedies must achieve the chemical specific cleanup standards for each media, including restoration of groundwater to drinking water standards, or any other standards established by statute. The standards must be either background, promulgated federal and state standards or risk-derived standards. Selection of cleanup standards also requires the establishment of points of compliance which represent where the media cleanup levels are to be achieved; remediation time frame which is the site-specific schedule for a remedy

Table 3. Facility-Specific Corrective Measure Objectives – Former Pig Iron Foundry		
No.	Environmental Media	Corrective Measures Objective
1	Soil	Maintain, in perpetuity, land use as industrial, a setting that has been found to be protective for the detected soil concentrations.
2	Soil	Ensure that industrial/commercial workers, construction workers, and trespassers are not exposed to unacceptable levels of soil contaminants.*
Notes * Although no unacceptable industrial risk was found to exist at the Former Pig Iron Foundry, the Facility has also chosen to have its Land Use Control Plan also apply to the Former Pig Iron Foundry for consistency in implementation and to be overly protective.		

III. SELECTED REMEDY

The recommended remedy found in the facility's April 14, 2017, Corrective Measure Study Report and proposed to the public on October 1, 2017, is identified as **Alternative 2: Land Use Controls**. This alternative can reasonably be concluded to satisfy the Facility-Specific Corrective Action Objectives found in Table 3; therefore, it is EPA's Final Decision that Alternative 2, which consists of the following components, be the remedy for the Former Pig Iron Foundry.

- **Land Use Controls:** The Land Use Controls are administrative means to protect current and future human exposure to unacceptable environmental contamination. This protection will be accomplished through the following techniques/components:
 - Land Use Control Plan (LUCP) developed by the Facility (and overseen by EPA)
 - An Environmental Covenant secured under the Alabama Uniform Environmental Covenants Act, Ala. Code §§ 35-19-1 to 35-19-14 (2007 Cum. Supp.).

IV. FUTURE PERFORMANCE, MONITORING AND EFFECTIVENESS OF SELECTED REMEDY

The selected remedy will be assessed against the following facility-specific objectives and cleanup standards:

A. Facility-Specific Corrective Action (Remedy) Objectives

The selected remedy will conform with the Facility-Specific Corrective Action Objectives listed in Table 3 of this Final Decision.

B. Facility-Specific Cleanup Standards

The success of the selected remedy will be measured against the numeric and non-numeric cleanup standards listed in Table 3.

(including both the time frame to construct the remedy and estimate of the time frame to achieve the cleanup levels at the points of compliance).

3. **Control of Sources of Releases:** Remedies must control the sources of release(s) so as to reduce or eliminate, to the extent practicable, further releases of hazardous waste or hazardous constituents that may pose a threat to human health and the environment. In this context, "source" includes both the location of the original release as well as locations where significant mass of contaminants may have migrated and remain in a distinct geographic area.


**Table 4. Narrative (Non-Numeric) Cleanup Standards for
Facility-Specific Soil Objectives 1 and 2 (Land Use Controls)**

Cleanup "Technology"	Comment on Cleanup "Technology"	Implementation Technique / Mechanism	Components of Cleanup Standard	Point of Compliance
Institutional Controls	<p>With use of a current and reasonable setting of industrial/commercial land use, the need to actively address soil contamination was deemed not to be needed. Groundwater contamination does exist at levels requiring active remediation.</p> <p>In order to satisfy Facility-Specific Soil Corrective Measure Objectives 1 and 2 and to satisfy Facility-Specific Corrective Measure Objective 4, institutional controls are needed to ensure that land use does not inadvertently and/or unknowingly become residential in the future, and to protect workers from unknowingly being exposed to contamination that might be at unacceptable levels.</p>	Environmental Covenant	<p>An Environmental Covenant shall be secured under the Alabama Uniform Environmental Covenants Act, Ala. Code §§ 35-19-1 to 35-19-14 (2007 Cum. Supp.).</p> <p>The Environmental Covenant shall be entered with the intent of providing clear and enforceable rules for the perpetual care of the Facility's real estate in light of the selected remedy. The Environmental Covenant shall list components of the LUCP that best reside long term with the land as opposed to specific operating procedures at the Facility (e.g., deed restriction to limit site to industrial land use only; deed restriction to limit use of groundwater, etc.).</p>	Throughout the SMA
Institutional Controls		Corporate Land Use Plan (LUCP)	<p>The LUCP, at a minimum, shall:</p> <ol style="list-style-type: none"> 1. Acquire a deed restriction on land and groundwater use through securing an Environmental Covenant. 2. Explain the land use controls to be used to protect workers, contractors, public from exposure to contaminated environmental media (e.g., permits to perform any digging activities and the proper personal protective equipment (PPE), fences/signs as necessary to prevent unauthorized access, etc.). 3. Include all necessary information or structure necessary to implement the LUCP (e.g., points-of-contact; monitoring program; notification procedures for LUCP violations, pending sale/lease of property, etc.; and reporting). 	Throughout the SMA

V. DECISION

Based on the administrative record compiled for this corrective action remedy, I have determined that the selected remedy described in this document will be protective of human health and the environment.

2/22/18
Date


Carol J. Monell
Acting Director
Resource Conservation and Restoration Division

